

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							February 2003				
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev							
COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		12807	10767	9968	9320	9971	10211	9972	10599	Continuing	Continuing
B32	ADV MAINT CONCEPTS/EQ	3329	3418	7095	6458	6534	6775	6456	6987	0	49988
B33	CARGO HANDLING & MISSION SPT	2881	3073	0	0	0	0	0	0	0	8679
B45	AIRCREW INTEGRATED SYS-AD	6597	4276	2873	2862	3437	3436	3516	3612	Continuing	Continuing
<b>A. Mission Description and Budget Item Justification:</b> This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipment, and Aircrew Integrated Systems (ACIS).											
<b>B. Program Change Summary</b>		FY 2002	FY 2003	FY 2004	FY 2005						
Previous President's Budget (FY 2003)		13196	8643	10389	10482						
Current Budget (FY 2004/2005 PB)		12807	10767	9968	9320						
Total Adjustments		-389	2124	-421	-1162						
Congressional program reductions											
Congressional rescissions			-346								
Congressional increases			2800								
Reprogrammings		-68	-70								
SBIR/STTR Transfer		-321	-260								
Adjustments to Budget Years				-421	-1162						
FY 04/05 funds realigned (\$421/1162K) to higher priority requirements.											
Beginning in FY04, funds from Project B33 have been moved to Project B32.											

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								February 2003		
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>				PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>					PROJECT <b>B32</b>	
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
B32 ADV MAINT CONCEPTS/EQ	3329	3418	7095	6458	6534	6775	6456	6987	0	49988
<p><b><u>A. Mission Description and Budget Item Justification:</u></b> This program explores, develops, and integrates affordable aviation ground support equipment (AGSE) and diagnostic technologies to replace obsolete and unsupportable AGSE and diagnostic equipment. It enhances utilization of current and future aircraft by improving the efficiency of maintenance and servicing operations by validating new maintenance concepts to improve man to machine interface, enhance aircraft maintenance processes and reduce operation and support (O&amp;S) costs. Included in this program are projects such as the evaluation of: database management software, diagnostic/prognostic monitoring systems, battle damage assessment and repair (BDAR) procedures and tools, advanced maintenance aid concepts (AMAC), automated configuration management, hybrid electric vehicle concepts, aviation turbine engine diagnostic system (ATEDS) concept, vibration management enhancement program, and concept exploration for the new aviation ground power system (NAPS). This Program Element also develops equipment and procedures for improvement of loading, transport, and off-loading of helicopter cargo. The most promising concepts/evaluations will be pursued. These efforts will significantly enhance aviation asset availability and flight safety, and allow the WSM to develop prototype systems and initiate the acquisition process.</p> <p>This program element enhances utilization of current and future aircraft by improving the efficiency of maintenance and servicing operations by validating new maintenance concepts to improve man to machine interface, enhance aircraft maintenance processes and reduce operation and support cost. Included in the project are elements such as: advanced maintenance aids, diagnostic and prognostic monitoring systems, trending analysis, support infrastructure analysis, rapid battle repair procedures and tools development to speed the return of aircraft to combat ready status, and develops new equipment for aerial recovery of damaged aircraft. This project develops equipment and procedures for improvement of loading, transport, and off-loading of helicopter cargo. FY 04 completes prototyping, design refinement and testing of critical ground support systems in preparation for a milestone decision. Funds for the remote external cargo monitoring and other efforts to include New Aviation Power System, Battle Damage Assessment and Repair, and Advanced Aircraft Towing System. Other efforts in FY 05 include Aviation Vibration Analyzer II, Hybrid Electric Vehicles and Maintenance Free Tires. The most promising concepts and evaluations will be pursued. These efforts will significantly enhance aviation asset availability and flight safety, and allow the PM to initiate the acquisition process and development of the prototype systems. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan.</p> <p>Beginning in FY 04, funds from Project B33 have been moved to this budget line.</p>										

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)			February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>4 - Advanced Component Development and Prototypes</b>		<b>0603801A - Aviation - Adv Dev</b>			<b>B32</b>	
<u>Accomplishments/Planned Program</u>		FY 2002	FY 2003	FY 2004	FY 2005	
Aviation Turbine Engine Diagnostics System (ATEDS) - Software development		0	0	900	750	
New Aviation Ground Power System (NAPS) - Develop performance specification and analyze prototype		0	0	200	150	
Battle Damage Assessment and Repair (BDAR) Kit - Demonstration & validation		0	0	100	125	
Digital Aircraft Weight & Balance Automation (P3I)		0	0	200	0	
Aircraft Towing Vehicles - Advanced Fuel Electric Drive - Perform market research		0	0	125	150	
Swaging Tool Kit (A&B)		0	0	50	100	
Advanced Ground Support Equipment - Will apply state-of-the-art technology to reduce the AGSE footprint and increase reliability in meeting AGSE operational requirements in support of modernized aircraft.		0	0	0	475	
Advanced AGSE Working Group - Concept and technology development/IPT		75	75	100	100	
Aviation Parts Marking Automation		0	0	250	300	
Maintenance Platform & Tow Bar Modernization		0	150	200	150	
Automated Configuration Management (DMAD)		93	1175	700	615	
Advanced Maintenance Aid for Army helicopters - Will improve fault isolation of parts (DMAD)		825	600	580	465	
AGSE Support of Modernized Aircraft - Fuel Cell Corrosion Inspection Tool		0	0	0	0	
AGSE Support of Modernized Aircraft - Advanced Multiplex Test System		0	0	0	0	
Hybrid Electric Vehicle - Prototype, systems integration, early operational testing		650	349	570	500	
Future Aviation Repair & Maintenance Systems		0	150	550	535	
Maintenance Free Tires - Evaluation of application to AGSE		75	43	0	0	
Aviation Maintenance Shelter (Deployable)		0	0	250	300	
Aviation Vibration Analyzer II - software		950	0	0	0	
Turbine Engine Borescope Evaluation System		0	0	75	50	
Management Support Services		661	876	2245	1693	
Totals		3329	3418	7095	6458	

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BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>					PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>				PROJECT <b>B32</b>																							
<div style="border: 1px solid black; margin-bottom: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%; text-align: left; padding: 5px;"><b><u>B. Other Program Funding Summary</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2002</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2003</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2004</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2005</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2006</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2007</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2008</u></b></th> <th style="width: 5%; text-align: center; padding: 5px;"><b><u>FY 2009</u></b></th> <th style="width: 10%; text-align: center; padding: 5px;"><b><u>To Compl</u></b></th> <th style="width: 10%; text-align: center; padding: 5px;"><b><u>Total Cost</u></b></th> </tr> <tr> <td style="padding: 5px;">Aircraft Procurement, Army(APA) SSN AZ3100</td> <td style="text-align: center; padding: 5px;">18882</td> <td style="text-align: center; padding: 5px;">19257</td> <td style="text-align: center; padding: 5px;">16597</td> <td style="text-align: center; padding: 5px;">16993</td> <td style="text-align: center; padding: 5px;">30436</td> <td style="text-align: center; padding: 5px;">42308</td> <td style="text-align: center; padding: 5px;">47839</td> <td style="text-align: center; padding: 5px;">45365</td> <td style="text-align: center; padding: 5px;">Continuing</td> <td style="text-align: center; padding: 5px;">Continuing</td> </tr> </table> </div> <div style="padding: 10px;"> <p><b><u>C. Acquisition Strategy:</u></b> This project is an aggregate of advanced maintenance concepts -related projects. While the detailed acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through Government test (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort.</p> </div>											<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>	Aircraft Procurement, Army(APA) SSN AZ3100	18882	19257	16597	16993	30436	42308	47839	45365	Continuing	Continuing
<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>																						
Aircraft Procurement, Army(APA) SSN AZ3100	18882	19257	16597	16993	30436	42308	47839	45365	Continuing	Continuing																						

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev					PROJECT B32		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATEDS	C/CPFF	Allied Signal, Phoenix, AZ, Allied Signal, Indianapolis, IN; Sikorsky, Stratford, CT; Boeing/GE	0	0		900	2Q	750	2Q	0	1650	1650
b . NAPS	MIPR	PIF, Redstone Arsenal, AL	0	0		200	2Q	150	2Q	0	350	350
c . BDAR	C/CPFF	AATD	0	0		100	2Q	125	2Q	0	225	225
d . Digital Aircraft Weight & Balance Automation (P31)	MIPR	AATD/SED	0	0		200	2Q	0		0	200	200
e . Aircraft Towing Vehicle (Fuel/Electric)	MIPR	AATD	0	0		125	2Q	150	2Q	0	275	375
f . Swaging Tool Kit A&B	MIPR	AATD	0	0		50	2Q	100	2Q	0	150	150
g . AGSE Ground Support of Modernized Aircraft	MIPR	AATD	0	0		0		475	2Q	0	475	475
h . Adv AGSE Working Group	CA/CR	Rita, Easton, MD	2462	75	2Q	100	2Q	100	2Q	300	3037	3062
i . APMA	SS/CPFF	Boeing, Philadelphia, PA	895	0		250	2Q	300	2Q	0	1445	1445

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev					PROJECT B32		
I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Maintenance Platform & Towing Bar Modernization	MIPR	AATD	0	150	3Q	200	2Q	150	2Q	0	500	500
k . Automated Configuration Management (DMAD)	C/CPFF	Boeing, Philadelphia, PA	265	1175	2Q	700	2Q	615	2Q	1635	4390	4390
l . Advanced Maintenance Aid Concepts (DMAD)	C/CPFF	Boeing, Philadelphia, PA	825	600	2Q	580	3Q	465	2Q	1520	3990	3990
m . Hybrid Electric Vehicle	MIPR	TACOM	650	349	2Q	570	2Q	500	2Q	0	2069	2069
n . Future Aviation Repair & Maintenance System	C/CPFF	AATD	0	150	4Q	550	2Q	535	2Q	1391	2626	2626
o . Maintenance Free Tires	MIPR	AATD	75	43	3Q	0		0		0	118	175
p . Aviation Maintenance Shelter (Deployable)	FFP	AATD	0	0		250	2Q	300	2Q	0	550	550
q . AVA II Software	C/CPFF	DRC/IAC	950	0		0		0		0	950	950
r . Turbine Engine Borescope Evaluation	MIPR	AATD	0	0		75	2Q	50	2Q	0	125	125
Subtotal:			6122	2542		4850		4765		4846	23125	23307

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev					PROJECT B32		
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Engineering Services	MIPR	AATD	1332	583	1Q	1483	1Q	916	1Q	Continue	4314	Continue
b . Technical Engineering Services	MIPR	DCD	0	0		160	2Q	175	2Q	0	335	0
Subtotal:			1332	583		1643		1091		Continue	4649	Continue
Remarks: None												
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: None												

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	NA		219	110	2Q	272	1Q	272	2Q	Continue	873	Continue
b . Program Management In-House	NA		437	183	1-4Q	330	1-4Q	330	1-4Q	Continue	1280	Continue
Subtotal:			656	293		602		602		Continue	2153	Continue
Remarks: None												
Project Total Cost:			8110	3418		7095		6458		Continue	29927	Continue



Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>				PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>				PROJECT <b>B32</b>
<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - Develop software	4Q	1-3Q						
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - Advanced Aircraft Software		4Q	1-4Q	1-4Q	1-4Q			
AVIATION CLEANING AND DEICING SYSTEM (ACDS) - Complete evaluation & Specs	1-4Q							
NEW AVIATION GROUND POWER SYSTEM (NAPS) - Prototype evaluation	1-4Q	1-2Q						
NEW AVIATION GROUND POWER SYSTEM (NAPS) - Complete evaluation & specifications		3-4Q	1-4Q	1-4Q				
BATTLE DAMAGE ASSESSMENT & REPAIR (BDAR) KITS - Complete Electrical Repair Kit	3-4Q	1-2Q						
BATTLE DAMAGE ASSESSMENT & REPAIR (BDAR) KITS - Develop & prototype fuel cell & fluid line kits		3-4Q	1-2Q					
BATTLE DAMAGE ASSESSMENT & REPAIR (BDAR) KITS - Develop & prototype composite & fiber optic repair			3-4Q	1-4Q				
AVIATION VIBRATION ANALYZER (AVA II) - Concept exploration	3-4Q	1-2Q						
AVIATION VIBRATION ANALYZER (AVA II) - Demonstration/validation		3-4Q						
SWAGING TOOL KIT (A&B) - Procure prototype			1-2Q					
SWAGING TOOL KIT (A&B) - Demonstration/validation			3-4Q	1-2Q				
ADVANCED GROUND SUPPORT EQUIPMENT - Concept studies & evaluation				3-4Q	1-4Q			
ADVANCED GROUND SUPPORT EQUIPMENT - Select, evaluate & demonstrate prototypes						1-4Q	1-4Q	1-4Q
ADVANCED AVIATION TOWING EQUIPMENT (FUEL/ELECTRIC) - Concept studies & evaluation		2-4Q						
ADVANCED AVIATION TOWING EQUIPMENT (FUEL/ELEC) - Select, eval, & demo prototype			1-4Q	1-4Q				

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<b>Schedule Detail (continued)</b>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
TURBINE ENGINE BORESCOPE EVALUATION SYSTEM - Demonstration/Validation			1-4Q	1-4Q				
AGSE SUPPORT TO MODERNIZED AIRCRAFT - Concept studies & evaluation			2-4Q		2-4Q		2-4Q	
AGSE SUPPORT TO MODERNIZED AIRCRAFT - Systems evaluation & demonstration				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
ADVANCED AGSE WORKING GROUP - Digital Aviation Logistics Working Group (DAL)	3-4Q	1-4Q						
ADVANCED AGSE WORKING GROUP - Concept & technology development/IPT		2-4Q	1-4Q	1-4Q				
AVIATION PARTS MARKING AUTOMATION - Concept development & validation of platform			3-4Q	1-4Q	1-4Q			
MAINTENANCE PLATFORM & TOWING BAR MODERNIZATION - Evaluation of COTS alternatives		2-4Q						
MAINTENANCE PLATFORM & TOWING BAR MODERNIZATION - Select, eval and demo prototypes			1-4Q	1-3Q				
AUTOMATED CONFIGURATION MANAGEMENT - Evaluate & select a standard parts coding system	4Q	1-4Q						
AUTOMATED CONFIGURATION MANAGEMENT - Eval & demo selected coding systems on platforms		1-4Q						
ADVANCED MAINTENANCE AID CONCEPTS (AMAC) - Develop maint aid to isolate faulty components	4Q	1-4Q						
ADVANCED MAINTENANCE AID CONCEPTS (AMAC) - Evaluate & demonstrate maint aid to platforms			1-4Q	1-4Q	1-4Q			
HYBRID ELECTRIC VEHICLE - Concept evaluation & purchase of prototype vehicle	3-4Q	1-3Q						
HYBRID ELECTRIC VEHICLE - Evaluate & demonstrate hybrid vehicle		4Q	1-4Q	1-4Q				
FUTURE AVIATION REPAIR & MAINTENANCE SYSTEM - Concept studies & evaluation		2-4Q	1-3Q					

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<u>Schedule Detail (continued)</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
FUTURE AVIATION REPAIR & MAINTENANCE SYSTEM - Select, eval, and demo selected prototypes			4Q	1-4Q	1-4Q	1-4Q		
MAINTENANCE FREE TIRES - Research tires on current AGSE ramp equipment	1-2Q							
MAINTENANCE FREE TIRES - Select, evaluate & demonstrate selected COTS alternatives	3-4Q	1-4Q						
AVIATION VIBRATION ANALYZER (AVA II) - Concept development & demonstration	1-4Q	1-3Q						
AVIATION MAINTENANCE SHELTER (AMS) - DEPLOYABLE - Evaluate current portable building concepts			3-4Q	1Q				
AVIATION MAINTENANCE SHELTER (AMS) - DEPLOYABLE - Select, evaluate & demo shelters				2-4Q	1-4Q	1-4Q		

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COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
B33 CARGO HANDLING & MISSION SPT	2881	3073	0	0	0	0	0	0	0	8679
<p><b><u>A. Mission Description and Budget Item Justification:</u></b> This project explores, develops and integrates affordable ground support equipment and diagnostic technologies to replace obsolete and unsupportable ground support equipment and diagnostics with new and standardized equipment and diagnostics that are compatible with all Army aircraft models; develops rapid battle repair procedures and tools to speed the return of aircraft to combat ready status; develops new equipment for aerial recovery of damaged aircraft, and develops equipment and procedures for improvement of loading, transport, and off-loading of helicopter cargo. Funds for the high-capacity external cargo winches, remote external cargo monitoring and other efforts to include Aviation Turbine Engine Diagnostics System, Aircraft Cleaning and Deicing System, New Aviation Power System, Corrosion Environment Monitor Sensors, Battle Damage Assessment and Repair, Shop Equipment Contact Maintenance, Digital Aircraft Weight &amp; Balance (P3I) and Advanced Fuel Cell Towing Vehicles. Addressing priority Aviation Ground Support Equipment (AGSE) will allow the PM to initiate the acquisition process and development of the prototype systems. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan. Funds from this Project have been moved to B32 starting in FY 04.</p>										
<b><u>Accomplishments/Planned Program</u></b>							<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
Aviation Turbine Diagnostic System (ATEDS) - software development.							1140	1500	0	0
Aircraft Cleaning and De-icing System (ACDS)- operational testing and specification development.							125	0	0	0
New Aviation Ground Power System (NAPS)- develop performance specification and analyze prototype.							146	252	0	0
Strategic Plan for Aviation Ground Support Equipment - development of investment strategy.							0	275	0	0
Battle Damage Assessment and Repair (BDAR) Kit - demonstration & validation.							100	100	0	0
Aviation Vibration Analyzer (AVA II) - prototype hardware.							450	0	0	0
Digital Aircraft Weight & Balance Automation (P3I)							0	50	0	0
Aircraft Towing Vehicles - Advanced Fuel Electric Drive - perform market research.							0	0	0	0
Management Support Services							920	896	0	0
Totals							2881	3073	0	0

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<b><u>B. Other Program Funding Summary</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>FY 2008</u></b>	<b><u>FY 2009</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
Aircraft Procurement, Army (APA) SSN AZ3100	18882	19257	16597	16993	30436	42308	47839	45365	Continuing	Continuing
<p><b><u>C. Acquisition Strategy:</u></b> This project is an aggregate of advanced mission support and cargo handling concepts -related projects. While the detailed acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through Government test (developmental and operational). Program documentation for milestone decisions is prepared, as appropriate, concurrently with the development effort.</p>										

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATEDS	C/CPFF	AlliedSignal, Phoenix, AZ; Allison, Indianapolis, IN; Sikorsky, Stratford, CT; Boeing/GE	5823	1500	2Q	0		0		0	7323	0
b . ACDS	C/CPFF	Riveer, South Haven, MI	1063	0		0		0		0	1063	920
c . NAPS I	MIPR	Rome Labs, Rome, NY	1310	0		0		0		0	1310	1000
d . NAPS II	MIPR	PIF, Redstone Arsenal, AL	0	252	2Q	0		0		0	252	0
e . Strategic Plan (AGSE)	C/CPFF	CAS	0	275	2Q	0		0		0	275	0
f . ACHS (I & II)	C/CPFF	AATD	1385	0		0		0		0	1385	2134
g . BDAR	C/CPFF	AATD	100	100	3Q	0		0		0	200	600
h . AVA II	C/CPFF	DRC/IAC	450	0		0		0		0	450	600
i . Digital Aircraft Weight & Balance Automation (P31)	MIPR	AATD	0	50	2Q	0		0		0	50	250
j . Aircraft Towing Vehicle	MIPR	AATD	0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R-3)								February 2003				
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev						PROJECT B33		
I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			10131	2177		0		0		0	12308	5504
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Technical Engineering Services	MIPR	AATD	1049	431	1Q	0		0		0	1480	0
b . Technical Engineering Services	MIPR	DCD	156	156	1Q	0		0		0	312	0
Subtotal:			1205	587		0		0		0	1792	0
Remarks: None												

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev					PROJECT B33		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			0	0		0		0		0	0	0
Subtotal:												
Remarks: None												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management Support	NA		262	162	1Q	0		0		0	424	0
b . Program Management In-House	NA		141	147	1-4Q	0		0		0	288	0
Subtotal:			403	309		0		0		0	712	0
Remarks: None												
Project Total Cost:			11739	3073		0		0		0	14812	5504



Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>				PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>			PROJECT <b>B33</b>	
<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - Develop Software	4Q	1-3Q						
AVIATION TURBINE ENGINE DIAGNOSTIC SYSTEM (ATEDS) - Advanced Aircraft Software		4Q	1-4Q	1-4Q	1-2Q			
AIRCRAFT CLEANING AND DE-ICING SYSTEM (ACDS) - Complete Eval & Specs	1-4Q							
NEW AVIATION GROUND POWER SYSTEM (NAPS I) - Prototype Evaluation	1-4Q	1-2Q						
NEW AVIATION GROUND POWER SYSTEM (NAPS II) - AGPU Eval & Specs		3-4Q	1-4Q	1-4Q				
ADVANCED CARGO HANDLING SYSTEM (ACHS I & II) - Concept Exploration		2-4Q						
ADVANCED CARGO HANDLING SYSTEM (ACHS I & II) - System Development & Demonstration			1-4Q					
BATTLE DAMAGE ASSESSMENT & REPAIR KIT - Complete Electrical Repair Kits	3-4Q	1-2Q						
BATTLE DAMAGE ASSESSMENT & REPAIR KIT - Develop & Prototype Fuel Cell & Fluid Line Kits		3-4Q	1-2Q					
BATTLE DAMAGE ASSESSMENT & REPAIR KIT - Composite & Fiber Optic Repair			3-4Q	1-4Q				
AVIATION VIBRATION ANALYZER (AVA II) - Concept Exploration	3-4Q	1-2Q						
AVA II- Dem/Val		3-4Q	1-2Q					
SWAGING TOOL KIT A/B - Procure Prototype			1-2Q					
SWAGING TOOL KIT A/B - Demonstration/Validation			3-4Q	1-2Q				
ADVANCED AVIATION TOWING EQUIPMENT (FUEL/ELECTRIC) - Concept Studies & Evaluation			2-4Q					
ADVANCED AVIATION TOWING EQUIPMENT (FUEL/ELECTRIC) - Select, Evaluate & Demo Prototype			1-4Q	1-4Q				

Schedule Profile Detail (R-4a Exhibit)							February 2003				
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev				PROJECT B33			
<u>Schedule Detail (continued)</u>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							February 2003				
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603801A - Aviation - Adv Dev				PROJECT B45			
COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
B45	AIRCREW INTEGRATED SYS-AD	6597	4276	2873	2862	3437	3436	3516	3612	Continuing	Continuing
<p><b><u>A. Mission Description and Budget Item Justification:</u></b>Project DB45 - Air Warrior Systems (AW) Advanced Development: This project provides advanced development programs for improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness of the Army Transformation aircraft including the RAH-66 Comanche, AH-64 Apache/Longbow, CH-47 Improved Cargo Helicopter, and UH-60 Black Hawk. These programs include those systems and items of equipment that are unique and necessary to the sustainment, survivability, and performance of Army aircrews and troops on the future integrated battlefield and related training missions. Advanced development programs will focus on the development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Air Warrior (AW) program will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimate conditioning, crash and post-crash survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up displays, directed energy eye protection, and flame/heat protection. Specifically, Air Warrior will enable the Army Aviation Warfighter to exceed the approved Operational Requirements Document mission length of 5.3 hours of flight operations, as opposed to the 1.6 hours of mission capability that exists today with aviators in full chemical/biological protective gear. The AW design will improve overall aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. Advanced development will demonstrate and evaluate emerging technologies for integration into the Air Warrior ensemble through a series of block improvements. The Virtual Cockpit Optimization Program (VCOP) demonstrates an integrated system providing pilots with improved intuitiveness, sense of awareness, overall aircrew mission performance, aircrew and aircrew station interface, safety, and survivability by providing the pilot with augmented visionics, three-dimensional audio improvements, and visual data regarding aircraft systems status and operation, threat warnings, and improved transition and training of pilots who must operate a number of different aircraft platforms during different missions. This project in this Program Element does not duplicate any aircraft platform program efforts. Both joint and service independent efforts continue to be pursued under the scope of this project. This system supports the Objective transition path of the Transformation Campaign Plan (TCP).</p>											
<b><u>Accomplishments/Planned Program</u></b>							<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	
Began advanced component development of Air Warrior preplanned Block 2 improvements.							2677	0	0	0	
Continue advanced component development of Air Warrior preplanned Block 2 improvements.							0	1688	2873	2862	
Continued Virtual Cockpit Optimization Program Advanced Component Development and Integration of technologies for simulation and demonstration.							3920	2588	0	0	
<b>Totals</b>							<b>6597</b>	<b>4276</b>	<b>2873</b>	<b>2862</b>	

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>								<b>February 2003</b>																																			
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>					PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>				PROJECT <b>B45</b>																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;"><b>B. Other Program Funding Summary</b></th> <th style="text-align: center; padding: 5px;">FY 2002</th> <th style="text-align: center; padding: 5px;">FY 2003</th> <th style="text-align: center; padding: 5px;">FY 2004</th> <th style="text-align: center; padding: 5px;">FY 2005</th> <th style="text-align: center; padding: 5px;">FY 2006</th> <th style="text-align: center; padding: 5px;">FY 2007</th> <th style="text-align: center; padding: 5px;">FY 2008</th> <th style="text-align: center; padding: 5px;">FY 2009</th> <th style="text-align: center; padding: 5px;">To Compl</th> <th style="text-align: center; padding: 5px;">Total Cost</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">RDTE, A PE 0604801A PROJ DC45 - ACIS EMD</td> <td style="text-align: center; padding: 5px;">5365</td> <td style="text-align: center; padding: 5px;">3481</td> <td style="text-align: center; padding: 5px;">2379</td> <td style="text-align: center; padding: 5px;">2390</td> <td style="text-align: center; padding: 5px;">2305</td> <td style="text-align: center; padding: 5px;">2302</td> <td style="text-align: center; padding: 5px;">2534</td> <td style="text-align: center; padding: 5px;">2631</td> <td style="text-align: center; padding: 5px;">Continuing</td> <td style="text-align: center; padding: 5px;">Continuing</td> </tr> <tr> <td style="padding: 5px;">Aircraft Procurement, Army SSN AZ3110 - ACIS</td> <td style="text-align: center; padding: 5px;">15092</td> <td style="text-align: center; padding: 5px;">14956</td> <td style="text-align: center; padding: 5px;">28894</td> <td style="text-align: center; padding: 5px;">28719</td> <td style="text-align: center; padding: 5px;">29573</td> <td style="text-align: center; padding: 5px;">34177</td> <td style="text-align: center; padding: 5px;">41354</td> <td style="text-align: center; padding: 5px;">38105</td> <td style="text-align: center; padding: 5px;">Continuing</td> <td style="text-align: center; padding: 5px;">Continuing</td> </tr> </tbody> </table> <p style="margin-top: 20px;"> <b>C. Acquisition Strategy:</b> DB45 - An Air Warrior Program Definition and Risk Reduction development contract was awarded in FY1997 to perform a functional requirements analysis and consider user requirements and available technologies to optimize recommended alternatives within the constraints of cost as an independent variable. The Air Warrior basic ensemble program was approved to proceed into an engineering manufacturing development system life cycle phase in 1st Quarter, FY 1999. Currently, a combined government and contractor team is developing Air Warrior improvements and integrating those components into a Block 1 Air Warrior ensemble that will be integrated with the force modernization aircraft. Prototypes have been developed that represent the Block 1 Air Warrior ensemble for test and evaluation. The Air Warrior nonrecurring engineering began in FY2002 for unique installation for aircraft with Environmental Control Systems. Component advanced development of the Block 2 Air Warrior integrating joint and new technologies as block improvements to the Air Warrior ensemble began in FY 2002 and continues in FY 2003. Through a combined government and contractor team, the Virtual Cockpit Optimization Component Advanced Development and System Integration effort will investigate and demonstrate how a future rotary wing crewstation could be crafted to deal effectively with information overload on the digital battlefield. This effort also investigates the use of this technology in other crew stations, such as the Future Combat System.         </p>											<b>B. Other Program Funding Summary</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost	RDTE, A PE 0604801A PROJ DC45 - ACIS EMD	5365	3481	2379	2390	2305	2302	2534	2631	Continuing	Continuing	Aircraft Procurement, Army SSN AZ3110 - ACIS	15092	14956	28894	28719	29573	34177	41354	38105	Continuing	Continuing
<b>B. Other Program Funding Summary</b>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost																																	
RDTE, A PE 0604801A PROJ DC45 - ACIS EMD	5365	3481	2379	2390	2305	2302	2534	2631	Continuing	Continuing																																	
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ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>					PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>					PROJECT <b>B45</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block Improvements Concept Development	C- C/FP	Various	2059	572	1Q	1775	2Q	1762	2Q	Continue	Continue	Continue
b . Virtual Cockpit Optimization Program Concept Development	SS-CPFF	Microvision, Seattle, WA	10731	2122	2Q	0		0		10957	10957	10957
Subtotal:			12790	2694		1775		1762		Continue	Continue	Continue
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various Government	2088	675	1-4Q	508	1-4Q	477	1-4Q	Continue	Continue	Continue
Subtotal:			2088	675		508		477		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>					PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>					PROJECT <b>B45</b>		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block improvements System Development and Validation	MIPR	Various Government Agencies	353	100	3Q	0		0		Continue	Continue	Continue
b . Virtual Retinal Display System Development and Validation	MIPR	Various Government Agencies	512	0		0		0		512	512	512
c . VCOP	SS-CPFF	Microvision, Seattle WA	90	0		0		0		0	90	0
Subtotal:			955	100		0		0		Continue	Continue	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . PM Administration	Allotment	Various Government	345	807	1-4Q	590	1-4Q	623	1-4Q	Continue	Continue	Continue
Subtotal:			345	807		590		623		Continue	Continue	Continue
Project Total Cost:			16178	4276		2873		2862		Continue	Continue	Continue

Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>				PE NUMBER AND TITLE <b>0603801A - Aviation - Adv Dev</b>				PROJECT <b>B45</b>
<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Completed Block 1 Air Warrior System Developmental and Operational Tests.		1Q						
Began Air Warrior nonrecurring production engineering integration into aircraft platforms.	2Q							
Air Warrior basic ensemble Full Rate Production Decision.		2Q						
Advanced Component Development of Air Warrior Block improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
System Development and Demonstration of Air Warrior Block improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
VCOP components demonstration in Advanced Prototyping Engineering Experimentation (APEX) simulator	2Q	2Q						
Air Warrior FUE			2Q					